Approved For Release 2003/06/20 : CIA-RDP89-00244R000100140003-5

STAT [redacted]

Larry,

Here are the minutes of our meeting kicking off Project [redacted] STAT told me of the significant mailing delay to your office, so I'll use this route if you don't mind.

I've targeted November 11 to send the "Plan Approval" package to you which will have:

- Project Flow Chart of Sub-tasks
- Schedule for Sub-tasks and Interfaces
- Ground Rules
- Assumptions
- Requirements to be met by Utilities
  - Top level
  - Derived
- Outline of Final Report (Projected)

I elected to hold the package beyond the plan-and-schedule stage to give us a chance to firm up our derived requirements. Your review and acceptance of them at this early stage would help the study progress smoothly.

If you have any questions or comments, feel free to call me at the number below.

[redacted] STAT

Approved For Release 2003/06/20 : CIA-RDP89-00244R000100140003-5

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MINUTES: Kick-off Meeting for [redacted] STAT

9 AM - 11AM, 14 October 1981

Conference Room 114/2733

Following introductions and review of [redacted] structure and experience STAT in related programs, the meeting was devoted to discussion of questions that had been prepared and distributed at the meeting.

General Points not directly related to the questions, that were made throughout the meeting are noted below:

- The meaning of "critical loads" was discussed at length. The accepted definition was that they are the loads whose failure will result in failure of the tenant's missions.

- The customer's initial facility planning assumed a power loading of 50 watts/square foot for the computer/technical equipment areas, and 10 watts/square foot for other areas (which was chosen over the current commercial standards such as 6 watts/square foot because of the intended emphasis on distributed terminals and peripheral equipment). [redacted] was asked to apply applicable trends in power loading if known. All new equipment will be assumed. STAT

- [redacted] will assume that a good electrical grounding system will exist, using green-wire grounding for safety grounding (instead, for example, of using conduit paths). There will be no trade-offs in this study regarding grounding. STAT

- The building models are characterized as: STAT

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  Generalized "foot-print" drawings will be provided by the customer in a few days.

- Cost data will be shown in 1981 dollars, with the customer applying their escalation formulae; costing will include both acquisition and life cycle costs, broken out separately.

- As part of the final study output, [redacted] should: STAT

  - look at ways to ensure that backups/redundant features are continuously valid (ie: suggest "reliability assurance" programs/features);

  - identify/document the sources of numbers used for reliability calculations.

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The list of prepared questions evoked these responses:

1.1 "What are the magnitudes of the connected loads?"

The fraction that are "critical" loads can be taken as 25% of the technical power defined by the equipment. The remaining 75% would be "essential".

1.2 "What are the duty cycles of the connected loads?"

Major machine centers will be in 24-hour operation. Administrative areas, terminals, etc., will have about 12-hour operation. [redacted] should use their experience to assume the fraction of connected loads that are active. There were no special instructions regarding duty cycles or load factors.

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1.3 "What is the required quality of available power - i.e.: when is it considered not available?"

Reference was made to a recent Department of Commerce paper dealing with the quality of power required for various modern equipment. No super-sensitive equipment is expected to be purchased beyond normal, commercially-available hardware. TRW expertise should be used to declare power quality requirements.

1.4 "How many outages are acceptable per day, week, month and/or year, and for what maximum duration?"

It is preferable to go down infrequently and take a longer time to fix, rather than to go down often and fix quickly. Scheduled outages of essential power, for maintenance, etc., are acceptable. At least a month between scheduled outages seems right. A good target is no more than one unscheduled outage per year, for less than 30 minutes.

1.5 "Do the loads have any unusual characteristics or requirements, such as power bursts, cycling, etc.?"

No unusual load characteristics are foreseen, other than normal computer and communication systems operations.

1.6 "Is 400 Hz or DC power required?"

400 Hz power will be needed. [redacted] knowledge of design trends should set that fraction of the power to be assumed. Central DC power systems should be treated in the study, as opposed to system-by-system provisions. The customer will look further into DC power requirements.

STAT

Approved For Release 2003/06/20 : CIA-RDP89-00244R000100140003-5

1.7 "What is the geographic distribution of critical power use within the electronic centers?"

The statement of work calls for major electronic centers on lower floors. Some critical power will have to be distributed elsewhere, but care will be taken to minimize it. Large satellite centers of critical power use were discussed, and were generally disfavored by the customer (based on staffing arguments). This study should make several early assumptions and check with the customer, starting with a central machine area on bottom floors, and accommodating a "handful" of satellite areas.

1.8 "Are there any battery-operated communication systems?"

Communication systems that are critical would be included in the 25% factor, described in response to 1.1.

2.1 "What are the statistics of the locally-available commercial power?"

The customer will look into available local power records. An existing substation is being up-rated and will be used for this facility.

2.2 "Is on-site generation permitted?"

Yes. A neighboring facility uses diesels to generate peak power, for example. Continuous on-site generation should be factored into the study, with all related costs considered, such as environmental protection measures.

2.3 "Shall co-generation be considered?"

Whenever primary on-site generation is involved for reliability reasons, waste heat utilization co-generation should be considered.

2.4 "What is the ability of the facility operator to control the tenants relative to: a) load growth, and b) ability to shed loads?"

There will be reasonable ability to control both load growth and load shedding. Automated operational control of load-shedding and environmental control systems (ECS) should be treated. Assume that 50% of the essential loads can be scheduled for shedding.

3.1 "Are there any special architectural features to be taken into account, such as vast window areas, underground construction, etc."

These buildings will be rather conventional architecturally with Model I having the larger glass areas (about 50%) and Model II being a more "energy efficient" type (about 25% glass).

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3.2 and 3.3 were withdrawn.

3.4 and 3.5 What are the requirements on temperature and humidity level and tightness of control? What are the cleanliness requirements?"

There are no special ECS requirements, other than those dictated by installed equipment. The ECS should have reliability/availability compatible with the power system it supports.

4.1 "Are there any restrictions on the treatment of other utilities (water, waste, sewage)?

Local municipal utility services will be used.

4.2 "Are there any restrictions or dictates on fuels and what are their availabilities (natural gas, oil, coal, renewable energies)?"

The only fuel restrictions are the local unavailability of natural gas, and those dictated by EPA.

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4.3

4.4 "What is the expected level and quality of maintenance?"

Maintenance will be done through standard GSA practices.

4.5 "What are the timing requirements on: a) the study; b) construction and occupancy of the facility; and c) life (amortization period) of the facility?"

A six month study is acceptable. The building occupancy is to be assumed 5 years hence, and will have a 30-year life cycle.

Approved For Release 2003/06/20 : CIA-RDP89-00244R000100140003-5

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Approved For Release 2003/06/20 : CIA-RDP89-00244R000100140003-5

Next 1 Page(s) In Document Exempt

Approved For Release 2003/06/20 : CIA-RDP89-00244R000100140003-5